Zcchc12 Cas9-KO *Strategy*

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Project Overview

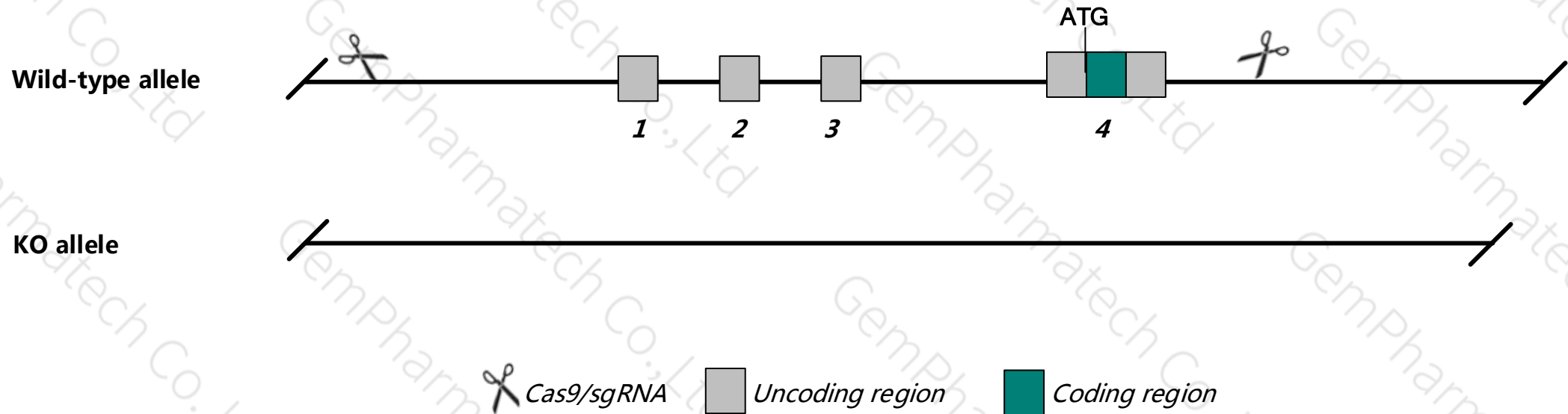|	
Project Name	*Zcchc12*
Project type	Cas9-KO
Animal background	C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zcchc12* gene. The schematic diagram is as follows:

Technical routes

- The *Zcchc12* gene has 4 transcripts, According to the structure of *Zcchc12* gene, exon1-exon4 of *Zcchc12-201* transcript is recommended as the knockout region.The region contains the all of coding seqence.Knock out the region,result in destruction of protein.

- This project uses CRISPR/Cas9 technology to modify *Zcchc12* gene. The brief process is as follows: sgRNA was transcribed in vitro, Cas9, sgRNA were microinjected into fertilized eggs of C57BL/6JGpt mice and homologous recombination was carried out to obtain F0 mice. A stable and hereditary F1 generation mouse model was obtained by mating F0 generation mice with C57BL/6JGpt mice which were confirmed positive by PCR-sequencing.

Notice

- The *Zcchc12* gene is located in the ChrX. If the knockout mice are mixed with other mice, two target genes are avoided on the same chromosome as possible, otherwise the offspring of mice with double gene positive and homozygous gene knockout can not be obtained.

- This Strategy is designed based on genetic information in existing databases. Due to the complexity of gene transcription and translation processes, all risks cannot be predicted under existing information.

Gene information （NCBI）

Zcchc12 zinc finger, CCHC domain containing 12 [*Mus musculus* (house mouse)]

Gene ID: 72693, updated on 5-Dec-2018

▲ Summary

|	
Official Symbol	Zcchc12 provided by MGI
Official Full Name	zinc finger, CCHC domain containing 12 provided by MGI
Primary source	MGI:MGI:1919943
See related	Ensembl:ENSMUSG00000036699
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Sizn1; AV136720; 2810028A01Rik
Expression	Biased expression in CNS E18 (RPKM 76.9), whole brain E14.5 (RPKM 41.1) and 5 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

The gene has 4 transcripts, and all transcripts are shown below：

| Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags		
Zcchc12-202	ENSMUST00000115256.1	2197	402aa	Protein coding	CCDS30058	Q9CZA5	-	TSL:2	GENCODE basic	APPRIS P1
Zcchc12-204	ENSMUST00000115258.8	2181	402aa	Protein coding	CCDS30058	Q9CZA5	NM_001358477 NM_028325 NP_001345406 NP_082601	TSL:1	GENCODE basic	APPRIS P1
Zcchc12-201	ENSMUST00000048067.9	2089	402aa	Protein coding	CCDS30058	Q9CZA5	NM_001358476 NM_001358478 NM_001358479 NM_001358480 NP_001345405 NP_001345407 NP_001345408 NP_001345409	TSL:1	GENCODE basic	APPRIS P1
Zcchc12-203	ENSMUST00000115257.7	2051	402aa	Protein coding	CCDS30058	Q9CZA5	-	TSL:5	GENCODE basic	APPRIS P1

The strategy is based on the design of *Zcchc12-201* transcript,The transcription is shown below：
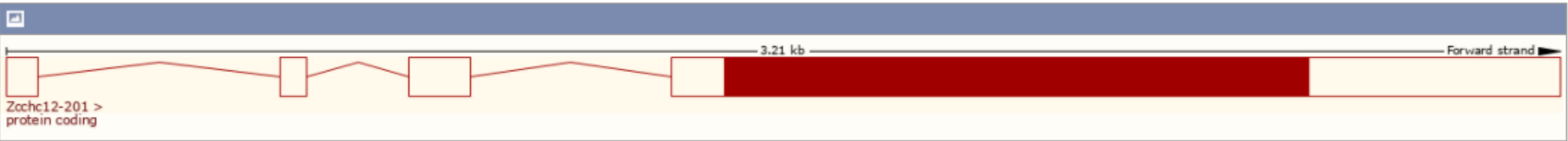
Genomic location distribution
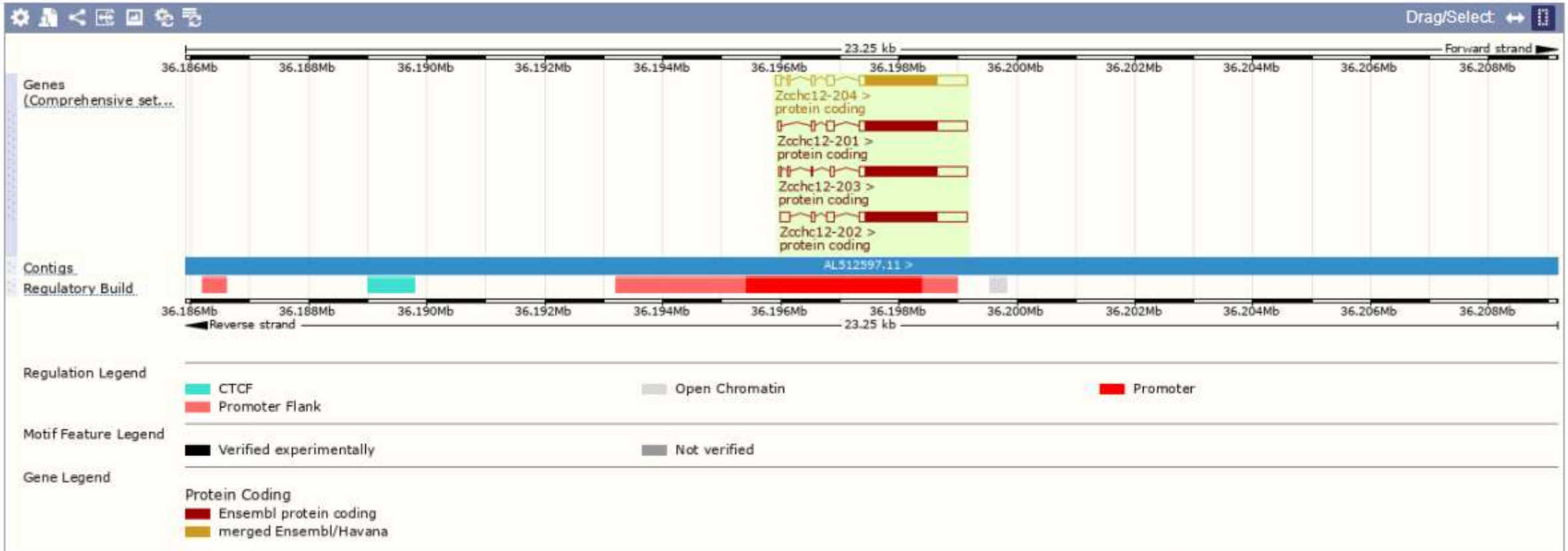
Protein domain
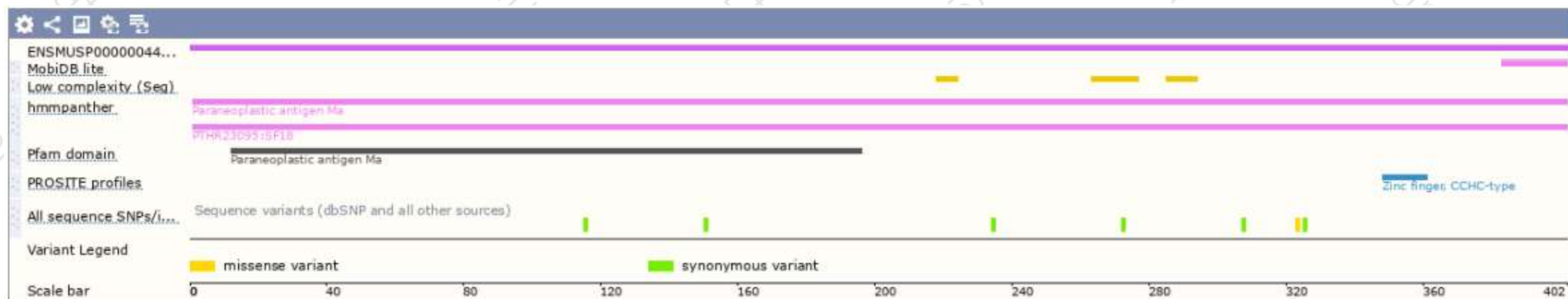
If you have any questions, you are welcome to inquire.
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